Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	ET Docket No. 00-258
Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems	)	

COMMENTS OF:

ARIZONA BOARD OF REGENTS FOR ARIZONA STATE UNIVERSITY (ASU)
ATLANTA EDUCATIONAL SERVICES
BOSTON CATHOLIC TELEVISION CENTER, INC.
BUTLER COUNTY COMMUNITY COLLEGE
CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
CHARLOTTE-MECKLENBURG PUBLIC BROADCASTING ASSOCIATION
CONNECTICUT PUBLIC BROADCASTING, INC.
THE (CATHOLIC) DIOCESE OF YOUNGSTOWN, OHIO
DETROIT EDUCATIONAL TELEVISION FOUNDATION
DUTCHESS COMMUNITY COLLEGE
EDUCATIONAL TELEVISION ASSOCIATION OF METROPOLITAN CLEVELAND
FRIENDS UNIVERSITY
HAMPTON ROADS EDUCATIONAL TELECOMMUNICATIONS ASSOCIATION, INC.
JEFFERSON COUNTY BOARD OF EDUCATION
THE KNOWLEDGE NETWORK OF GREATER OMAHA
MID-SOUTH PUBLIC COMMUNICATIONS FOUNDATION
MISSISSIPPI EDNET INSTITUTE, INC. (AND ITS MEMBER AGENCIES MISSISSIPPI DEPARTMENT OF EDUCATION, THE STATE BOARD FOR COMMUNITY AND JUNIOR COLLEGES, MISSISSIPPI AUTHORITY FOR EDUCATIONAL TELEVISION AND INSTITUTIONS OF HIGHER LEARNING)
MONTEREY COUNTY SUPERINTENDENT OF SCHOOLS
NEW JERSEY PUBLIC BROADCASTING AUTHORITY
NEWMAN UNIVERSITY
NORTHERN CALIFORNIA EDUCATIONAL TELEVISION ASSOCIATION, INC.
SANTA CLARA COUNTY BOARD OF EDUCATION
THE SCHOOL BOARD OF SARASOTA COUNTY (FLORIDA)
SANTA CRUZ COUNTY SUPERINTENDENT OF SCHOOLS
UNIVERSITY OF NORTH CAROLINA
WHYY, INC.
WICHITA PUBLIC SCHOOLS-USD #259
WICHITA STATE UNIVERSITY
WJCT, INC.

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Dated: February 22, 2001

SUMMARY

The Joint Parties are Instructional Television Fixed Service (ITFS) licensees or applicants for ITFS licenses in the 2500-2690 MHz band. The Joint Parties file in support of the position taken by the National ITFS Association (NIA), in which many of the Joint Parties are members. With respect to the many questions posed by the Commission regarding IMT-2000 / 3G Services, the Joint Parties agree with NIA that the evidence shows that implementation of 3G in the United States can move forward without any spectrum from the 2500-2690 MHz band. The Joint Parties believe the Congress and FCC have already identified ample spectrum for mobile communications purposes without a requirement of taking frequencies from the "educational spectrum preserve" which should be maintained in the 2500-2690 MHz band.

The Joint Parties have filed separately to emphasize the varied and many instructional purposes being fulfilled by ITFS licensees through existing analog and digital video systems, and to describe their plans to utilize the recent changes in ITFS rules to permit digital and "two-way" operation.

Finally, the Joint Parties file separately to emphasize the complex reliance which ITFS and Multipoint Distribution Service (MDS) licensees have on each other due to the history of licensing and rule changes by the Commission. In particular, the Commission and the public have yet to see the deployment of advanced wireless services made possible through the recent changes adopted for digital and two-way services in the band. In many areas of the country, ITFS/MMDS systems present the best choice for high-speed Internet service. The Commission should not do anything to disturb the developments which it has actively encouraged through its ITFS and MMDS licensing policies. The Commission should announce with certainty that it will not reallocate or disturb the existing licensing of the ITFS and MMDS stations in the 2500-2690 MHz band but will look elsewhere for "3G" spectrum, if it is needed. Such action would constitute wise and prudent spectrum management and would therefore best serve the public interest.

TABLE OF CONTENTS

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To: The Commission

JOINT COMMENTS

Arizona Board of Regents for Arizona State University (ASU); Atlanta Educational Services; Boston Catholic Television Center, Inc.; Butler County Community College; California State University; Northridge; Charlotte-Mecklenburg Public Broadcasting Association; Connecticut Public Broadcasting, Inc.; the (Catholic) Diocese of Youngstown, Ohio; Detroit Educational Television Foundation; Dutchess Community College; Educational Television Association of Metropolitan Cleveland; Friends University; Hampton Roads Educational Telecommunications Association, Inc.; Jefferson County Board of Education; the Knowledge Network of Greater Omaha; Mid-South Public Communications Foundation; Mississippi EdNet Institute, Inc. (and its member agencies Mississippi Department of Education, the State Board for Community and Junior Colleges, Mississippi Authority for Educational Television and Institutions of Higher Learning); Monterey County Superintendent of Schools; New Jersey Public Broadcasting Authority; Newman University; Northern California Educational Television Association, Inc.; Santa Clara County Board of Education; the School Board of Sarasota County (Florida); Santa Cruz County Superintendent of Schools; University of North Carolina; WHYY, Inc.; Wichita Public Schools-USD #259; Wichita State University; and WJCT, Inc. by their

counsel, collectively, "Joint Parties," by their counsel, file these Joint Comments in response to the "Notice of Proposed Rulemaking"("Notice") in the above-referenced proceeding released January 5, 2001 by the FCC and published in the Federal Register of January 23, 2001. All of the Joint Parties are Instructional Television Fixed Service (ITFS) licensees or applicants for ITFS licenses in the 2500-2690 MHz band, and as such, these comments should also be considered as comments on the "Interim Report" issued by the Office of Engineering and Technology, Mass Media Bureau, Wireless Telecommunications Bureau and International Bureau, DA 00-2583, released November 15, 2000.

The Joint Parties include a broad spectrum of ITFS licensees and applicants. Some have held licenses for over 30 years and operate widespread networks based on traditional ITFS design considerations which include hundreds of receive sites. Others are license holders that have excess capacity agreements with companies like WorldCom, Sprint and IP Wireless and that are continuing to pursue construction and activation of facilities. Some have participated in the conversion of analog television systems to digital transmission systems; others have participated in two-way digital experiments and are looking forward to the advantages of successful and widespread deployment of fixed advanced wireless systems. The Joint Parties believe that, while some conventional instructional television services are certain to remain necessary, the majority of services to be deployed in the 2500-2690 MHz band in the 2001-2010 time frame fit the broad definition of "advanced wireless services." Early introduction of such services, used by instructional licensees within their own systems and offered to the public by their commercial partners, will be delayed if the Commission reallocates any portion of the ITFS/MMDS band. Quick confirmation of the existing licensing policies for the 2500-2690 MHz band will preserve the needed confidence of ITFS licensees as well as the commercial

companies developing the systems and equipment needed for widespread broadband fixed services in the band.

A. THE JOINT PARTIES SUPPORT THE POSITIONS OF THE NATIONAL ITFS ASSOCIATION

1. Counsel for the Joint Parties has coordinated its filing in this proceeding with the National ITFS Association (NIA), in which many of the Joint Parties are members. NIA's draft comments have been circulated among interested ITFS licensees. The Joint Parties support the positions taken by NIA and file separately in order to create a fuller record for the Commission in its consideration of the past and present utilization of the 2500-2690 MHz band by ITFS licensees. The Joint Parties file also to emphasize certain aspects of their own experiences which compel the conclusion that the current allocation of the 2500-2690 MHz band should be left undisturbed by any decision made in this proceeding.

2. With respect to the many questions posed by the Commission regarding IMT-2000 / 3G Services, the Joint Parties agree with NIA that the evidence shows that implementation of 3G in the United States can move forward without any spectrum from the 2500-2690 MHz band. In this regard, the Joint Parties filed comments in response to the Cellular Telecommunications Industry Association petition which sought initiation of this rulemaking proceeding and a study of the availability of the 2500-2690 MHz band for future mobile services. In those comments, the Joint Parties urged the FCC to conduct that study, as well as a study to determine how much additional spectrum is in fact required for "3G" services. In fulfillment of its spectrum management responsibilities and in recognition of spectrum identified for reallocation by Congress, the Commission identified approximately 200 MHz of spectrum for reallocation over the next three to five years. Policy Statement "Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New

Millennium, FCC99-354, 14 FCC Rcd 19868 (1999). The availability of this spectrum forms the basis of the first two options identified in the Notice (Paras. 67, 68). NIA has in its Comments that additional spectrum either is not required for "3G" services or, in any event, is available in bands other than 2500-2690 MHz, and the Joint Parties join in that position.

3. As NIA has argued, should the Commission determine that any additional spectrum is required for advanced mobile services, that spectrum should come from bands other than 2500-2690 MHz. Advanced wireless services are being deployed in the band now, under licensing provisions which have only recently become final. In many areas of the country, ITFS/MMDS systems present the best choice for high-speed Internet service. The Commission should not do anything to disturb the developments which it has actively encouraged through its ITFS and MMDS licensing policies.

B. THE JOINT PARTIES HAVE MADE ACTIVE AND INNOVATIVE USES OF ITFS SPECTRUM FOR OVER TWO DECADES

4. It must be stressed that ITFS licensees have made substantial and productive use of the 2500-2690 MHz band or have formulated and begun to implement specific plans for the band despite formidable obstacles to its development. Following are examples from among the Joint Parties:

5. **Arizona State University.** Arizona State University (ASU) has provided distance learning over ITFS for nearly twenty years. It is the licensee of eight ITFS channels and has an excess capacity agreement with Sprint, whose Broadband Solutions Group provides financial and technical support to ASU. Working with Sprint's predecessor, ASU has converted its instructional system to digital video. Additionally, Sprint makes its wireless broadband service available at special pricing to students, faculty and staff of ASU, and a pilot project has been

underway which permits campus employees to obtain access to the University network from their homes.

6. In 2000-2001, two hundred thirty-nine courses were held over distance education, the majority of which were offered via ITFS. Enrollment in these courses totaled over 7, 400 and continues to increase, permitting students who cannot get to a campus to have access to a university education.

7. ASU is an active member of the NIA. A fuller version of its ITFS experiences is appended to the NIA comments filed today.

8. **Atlanta Educational Services**. Atlanta Educational Services (AES) is a nonprofit organization that is controlled by Atlanta Public Schools, with minority ownership by Network for Instructional Television (NITV). A predecessor entity to AES, with the same ownership, applied in 1985 for authority to construct a four-channel ITFS station. After protracted processing, that application was finally granted in 1998. The grant is the subject of an petition for reconsideration, but AES is proceeding with plans for activation of the station to serve the children of Atlanta and the general community. AES has entered into an excess capacity agreement with BellSouth Wireless. It believes that agreement to offer an excellent path to provide services efficiently and economically. It has been working with the assistance of NITV to develop programming that will complement the curricula of the Atlanta Public Schools. AES has been striving diligently to bring the benefits of ITFS to its inner-city constituency. It has almost reached the goal line, but its success depends on continued availability of the spectrum on which its plans have been based for 16 years.

9. **Boston Catholic Television Center, Inc**. Boston Catholic Television Center, Inc. (BCTV) is a not-for-profit corporation which operates under the sponsorship of the

Archdiocese of Boston. BCTV has a long and rich history. It started with a weekly radio program in 1949, and produced the first televised Sunday Mass in the country. BCTV inaugurated broadcast operations in Boston in the early 1960s on UHF TV Channel 38.

10. BCTV has been an ITFS licensee since 1967. The construction of its ITFS system and placement of receiving equipment at all of the schools of the Archdiocese was funded by the sale of Channel 38. The general audience programming once on the TV station became the basis of the BCTV channel, which is distributed over ITFS and redistributed to about 1.5 million households over cable systems in the Boston area. The BCTV channel is also received directly over ITFS by several hospitals and retirement homes. The programs on the BCTV channel include educational programming, some of an inspirational religious nature and some for children. Some programs are directed at shut-ins, and others at patients in the nursing homes and hospitals. BCTV operates with a staff of 20 from its Newtonville, Massachusetts offices and studios. Some BCTV programming is broadcast over the Paxton Network television station in Boston, and some is provided to The Inspiration Network and can be viewed nationwide by cable and DBS viewers.

11. In the 1960s and 1970s, distribution of ITV programming to over 100 schools of the Archdiocese was accomplished through the use of six ITFS stations at five locations. As the ITV service to the schools was phased out in the 1980s, BCTV worked cooperatively with area ITFS licensees and other educational institutions at distributing other types of educational programming, in particular for Boston University, Massachusetts General Hospital and the Massachusetts Institute of Technology. Northeastern University still uses some of BCTV's outlying area transmitters to reach some of its students.

12. In 1995, BCTV entered an agreement with CAI Wireless Systems, Inc.(CAI) which then planned a wireless cable television service for the Boston area. CAI, BCTV and other Boston area licensees have reconfigured the ITFS and MMDS stations in Boston and converted the video operation to digital video, one of the first such operations in the country. CAI and its successor WorldCom have conducted a variety of two-way digital services tests using BCTV's facilities.

13. BCTV will utilize its ITFS channels under the two-way rules to revive the educational service to the schools. With CAI's cooperation, BCTV conducted a pilot program in 1999 offering a video-on-demand service to five schools chosen for their geographical locations and financial strata. The service delivered over the ITFS channels included high-speed Internet access and two varieties of video-on-demand service, one for small classes and one for larger viewing audiences. Teachers were permitted to schedule the video presentations for their classes, and could preview the programs through video streaming technology. As soon as technical issues which arose during the pilot program operation are addressed, BCTV will resume and expand this service. With WorldCom's cooperation, BCTV filed in the two-way window and plans to construct its own facilities to enhance the existing system.

14. **Butler County Community College**. Butler County Community College, El Dorado, Kansas, has been an ITFS licensee since 1988. It is one of the five Wichita, Kansas area licensees which have been studying the transition to digital technology and the two-way rules. This informal consortium has been meeting since August of 1999 to better understand the FCC's two-way ruling and to make the necessary adjustments to the spectrum. The group has established that the two-way channels could provide benefit to the 90,000 students at the

institutions in providing a number of services, and it is presently planning a transition of its analog video system to a digital system.

15. **California State University, Northridge**. California State University, Northridge (CSUN) is part of the 23-campus California State University system and is the only public university located in Los Angeles' San Fernando Valley. CSUN also operates a satellite campus in adjoining Ventura County.

16. CSUN has operated ITFS facilities since 1983. CSUN has four ITFS stations located at Mt. Wilson, South Mountain, Palmdale and Ridgecrest, California and is an applicant for a new station at Santa Barbara. The Mt. Wilson facility was converted to digital video operation under an agreement with a wireless cable operator subsequently acquired by WorldCom. This was one of the first digital video conversions in the country. The revenue from the leasing of excess capacity on this station helps support technology- based programs that serve the entire campus community. Distance learning course tuition constitutes a significant source of revenue for CSUN.

17. CSUN is located in one of the most populated areas in the United States. Most of the student population is commuters, due to the substantial distances among communities in Greater Los Angeles. The ITFS system allows a broad spectrum of educational opportunities for the students at their place of employment or home, which in turn helps with the traffic problems that are facing many of the campuses in the Los Angeles Basin. Several of the receive sites that are utilizing the CSU Northridge system are over 40 miles distant from the campus, and if the ITFS system were eliminated, these students would have to drive to campus, increasing traffic and air pollution. CSUN has the capability through ITFS to provide engineering courses to the military at remote locations.

18. **Connecticut Public Broadcasting, Inc.** (CPBI) is in its twenty-first year of ITFS operations. CPBI is the licensee of public television and radio stations serving the State of Connecticut and surrounding areas. It has initiated Digital Television (DTV) operations at one of its stations and has the obligation to complete digital conversion by July 1, 2003. In planning for that conversion, CPBI initiated a project entitled "Mapping the Assets," to partner with other community organizations to develop new sources of program content that enhance the lives and livelihoods of residents throughout the state.

19. CPBI has been planning, constructing and operating ITFS systems for the benefit of the educational communities of Connecticut since 1981. CPBI was first granted authority to construct a four location, two-channel system for the community colleges of the state in 1982. CPBI was subsequently selected by the state to construct a state-wide system for the use of the State Department of Education, which became known as The Knowledge Network. Since 1984, CPBI has activated 30 transmitters at 12 locations and interconnecting microwave at 15 locations, serving an estimated 300 receive sites.

20. As The Knowledge Network expanded, additional requirements of a variety of state agencies have been discovered, and the system now supports projects of the Department of Social Services, nursing and medical courses for the Connecticut State University system, the state's Department of Corrections and the Department of Children and Families. After a year in which state funding has not been available, the governor recently recommended additional bond money for expansion of CPBI's digital educational delivery systems, including ITFS. A half-million dollars per year has been recommended for Fiscal Years 2001-02 and 2002-03, and it is most likely that the recommendation will be accepted by the State Legislature. Additionally, CPBI has a preliminary agreement with a commercial operator to modify some of the channels in

the system under the new digital "two-way" rules for ITFS. The commercial operator will use excess capacity on CPBI's system for the delivery of advanced wireless services and provide funding for additional educational programming initiatives planned by CPBI.

21. **Dutchess Community College**. Dutchess Community College (DCC), sponsored by the County of Dutchess, New York is part of the State University of New York system of higher education and has operated its ITFS system for over ten years. From its campus at Poughkeepsie, DCC uses ITFS to provide college credit courses and in-service training programs to off-campus extension sites. These sites include remote classrooms and the College's environmental center. DCC has filed to convert its two ITFS stations to digital operation, and plans a full two-way video and data system to its remote sites under the FCC's revised "two-way" ITFS rules.

22. **Educational Television Association of Metropolitan Cleveland.** Educational Television Association of Metropolitan Cleveland (ETAMC), is a non-profit corporation governed by a board of volunteer trustees. It is presently involved in a merger with the public radio organization in Cleveland, creating a new organization dedicated to public service and education through multiple media, including radio, television and the Internet.

23. ETAMC has been operating 11 channels of ITFS for over 20 years. Programming is distributed to schools and other locations in seven counties in the greater metropolitan Cleveland area. WVIZ currently provides to schools the Annenberg channel, the NASA channel, adult education programming (both college and basic high school), and k-12 instructional television programming. One channel is dedicated to coverage of state government. The Ohio Legislature is shown in session three times a week, and additional programs are

produced for the channel to on topics related to the legislative process and Cleveland history. Programming on this channel will soon to expand to an 8-hour legislative day.

24. Special events are taped for distribution by the ITFS system for the schools. For example, a recent speech by General Colin Powell was viewed by thousands of students who could not otherwise have attended the event.

25. WVIZ plans to utilize the FCC's two-way digital ITFS rules to reconfigure its system. Its vision for the future includes providing k-12 schools with interactive instructional television for low demand, highly academic courses and for interactive foreign language instruction for our many elementary schools via ITFS. In addition, WVIZ plans to provide broadband Internet connections for k-12 schools.

26. **Friends University.** Friends University has been an ITFS licensee since 1990. It is part of the informal Wichita, Kansas consortium which has been studying the transition to digital technology and the two-way rules. (see Butler County Community College discussed above).

27. **The Hampton Roads Educational Telecommunications Association, Inc.** (HRETA) was started in 1961 by Norfolk and Hampton Public Schools as an experiment in instructional television. HRETA is the licensee of public television station WRHO, Hampton-Norfolk, Virginia and serves as the Public Telecommunications Center for Hampton Roads. Like many PBS member stations, HRETA is active in providing education and community service. HRETA has used ITFS technology for seventeen years to deliver educational and public service information to a wide array of learners, working with numerous educational partners, including medical education to rural medical health facilities, televised college credit courses and educational programming service to 13 area secondary school systems for use in the classroom

and media centers. HRETA is the licensee of 14 ITFS stations and additionally operates from a digital site licensed under developmental authority to a subsidiary of WorldCom Broadband Solutions, with which HRETA has an excess capacity agreement. The entire region is covered with at least one analog channel; and in the core area around Norfolk both analog and digital channels are in operation.

28. The WHRO education (K-12) staff schedules programs over ITFS daily Monday through Friday between the hours of 7 a.m. and 10 a.m. Additional programming hours are requested after 3pm if necessary. Just this year, 11 Virginia school divisions have used ITFS to obtain programming from WHRO.

29. Additional users of the system include a college consortium which programs a dedicated channel with higher education programming, reaching approximately 480,000 households in the area. These institutions include Old Dominion University, Norfolk State University, Hampton University, Tidewater Community College, Thomas Nelson Community College, College of William & Mary, Christopher Newport College, University of Virginia and Virginia Wesleyan College.

30. Among the other users of the ITFS system is Eastern Virginia Medical School, which transmits medical education programming to medical personnel who would not otherwise have access to EVMS training. Among the existing 19 sites are rural medical facilities on Virginia's Eastern Shore.

31. A fuller version of HRETA's ITFS experiences is appended to the NIA comments filed today.

32. **Jefferson County Board of Education**. The Jefferson County (Kentucky) Board of Education oversees the development, operation, and improvement of the Jefferson County

Public Schools (JCPS), the 26th largest school district in the United States. More than 95,000 students (infants through adults) are enrolled in the District's educational programs. JCPS students attend one of 87 elementary schools, 23 middle schools, 20 high schools, or 22 other learning centers.

33. Jefferson County Board of Education has operated two ITFS stations in Louisville, Kentucky since 1976 (a repeater is required due to the terrain). The stations currently provide 160 hours of instructional programming per week. The system is additionally used for 4-6 hours a week of professional development training, and further extensively used for instant communications (messages to staff from our Superintendent, our own information programming, etc.) to the 150 schools in the district.

34. **Mississippi EdNet Institute, Inc., including Mississippi Department of Education, the State Board for Community and Junior Colleges, Mississippi Authority for Educational Television and Institutions of Higher Learning.** Mississippi EDNET Institute, Inc. (EDNET), established in 1992, is a collaborative effort by Mississippi's educational institutions to deliver distance learning programs to all Mississippians. The goals of EDNET are to support instruction at all levels of education, research and economic development in Mississippi, prepare the workforce, and enhance the efforts of Mississippi agencies to serve the citizens of the state. EDNET is the administrative and operations organization which supports and operates the network of behalf of its member agencies: Mississippi Department of Education, the State Board for Community and Junior Colleges, Mississippi Authority for Educational Television (MAET) and Institutions of Higher Learning. The Governor and Attorney General are ex officio members of the EDNET board. Member agency MAET provides

many educational programming resources and technical assistance to EDNET, including resources available from the Public Broadcasting Service.

35. The four constituent EDNET member agencies and EDNET itself are ITFS licensees. In partnership with Wireless One, a division of WorldCom, EDNET has been putting the finishing touches on construction of a statewide system using 20 ITFS channels in nine locations, including over 900 education sites and local production studios at 11 educational institutions, covering the entire state of Mississippi.

36. EDNET provides educational television programming for Mississippi's pre-K-12 and adult education community, twenty-four hours each day. EDNET can provide up to five channels to schools, colleges, extension centers, head start centers, workplaces and other places of learning. EDNET programming also includes public affairs, professional and worker training and transmission of teleconferences for educational, training and administrative purposes.

37. Wireless One presently provides "wireless cable" services in Mississippi using its own channels and excess capacity leased from EDNET and its member agencies. EDNET's programming is available to Wireless One subscribers. The agreement has also produced substantial revenue for EDNET.

38. As to the future, EDNET looks forward to conversion of its existing system under the "two-way" rules so that it may enhance its video offerings in the future with broadband Internet service. This is a key component in the state's strategic economic development plan. Mississippi currently ranks last in the percentage of households with Internet access and in per capita income, and is unlikely to attract commercial Internet service providers. Because of the state-wide coverage achieved through use of 2.5 Ghz spectrum, EDNET is uniquely positioned

to use its ITFS spectrum to serve the needs of the many isolated, rural and underserved markets within Mississippi.

39. EDNET is an active member of the NIA. A fuller version of its ITFS experiences is appended to the NIA comments filed today.

40. **The New Jersey Public Broadcasting Authority**. The New Jersey Public Broadcasting Authority (NJPBA), the state agency responsible for serving the public telecommunications needs of New Jersey, is the licensee of an ITFS system designed to serve the State using four ITFS stations located in Trenton, Monclair and New Brunswick, New Jersey and Philadelphia, Pennsylvania. To date, NJPBA has activated much of the ITFS system, including full activation of two stations and partial activation of the remaining stations. These facilities offer college level credit courses in computer programming, advanced mathematics and computer machine language. Some of these programs are fully interactive.

41. In addition, NJPBA has an excess capacity lease agreement with Atlantic Microsystems, Inc., one of the CAI Wireless Systems, Inc. (CAI) companies acquired by WorldCom. In light of this development and the Commission's decisions authorizing two-way service using ITFS facilities, NJPBA has had discussions with CAI/WorldCom with a view toward maximizing the use of its ITFS facilities. In all, NJPBA's educational activities and excess capacity arrangements amply serve the Commission's twin goals of developing instructional ITFS and commercial wireless cable services to a large urbanized area on the Eastern seaboard. They will provide NJPBA with the necessary resources to fully develop its ITFS system and afford NJPBA's wireless cable partner access to spectrum necessary for commercial service in the Philadelphia-New York corridor bridged by New Jersey.

42. **Newman University**. Newman University has been an ITFS licensee since 1990 (the initial license was issued in the name "Catholic Diocese of Wichita/Kansas Newman College). It is part of the informal Wichita, Kansas consortium which has been studying the transition to digital technology and the two-way rules. (see Butler County Community College discussed above).

43. **The University of North Carolina**. The University of North Carolina (UNC) through its adjunct agency, The UNC Center for Public Television (UNC), operates 11 full-service public television stations and numerous translator stations throughout North Carolina. As an experienced educational broadcaster, UNC has long recognized the potential use of ITFS frequencies to provide distance learning opportunities, particularly to unserved and underserved rural areas of the state through an interconnected wireless telecommunications system. Toward this end, UNC, which had begun some ITFS operations in the 1990s, proposed a full statewide ITFS system during the FCC's October 1995 ITFS filing window.

44. UNC likewise recognized the need for a commercial wireless partner to make possible the comprehensive system, which would also provide commercial services to the state. It developed and released an Request for Proposals soliciting potential commercial partners shortly after the 1995 filing window. Ultimately, UNC selected Wireless One of North Carolina, L.L.P. (WONC) as its commercial partner. At the same time numerous other educational institutions, including North Carolina community colleges and public school systems, proposed ITFS facilities during the 1995 window. Many of these applications were mutually exclusive with UNC's proposals; in fact, a massive daisy chain of conflicting applications was created throughout the state. Through the unprecedented cooperative efforts of all of the parties interested in bringing the promise of comprehensive ITFS service to North Carolina, technical

settlements were reached resolving virtually all of the mutually exclusive applications in the state. Because of the technical complexity of this process, the last engineering resolution was filed with the Commission just this month.

45. In all, UNC has spent over five years working diligently to resolve the technical and regulatory issues necessary to proceed with implementation of the North Carolina statewide system. With the resolution of these critical issues, UNC can now focus on the implementation of services utilizing the FCC's newly adopted digital and two-way rules for ITFS and MMDS. Full details concerning the history of UNC's involvement in ITFS and its plans for the future development of the spectrum in cooperation with other educational institutions in the state and WONC are set forth in Comments filed by UNC simultaneously herewith.

46. **Santa Clara County Office of Education**. Santa Clara County Office of Education (SCCOE) has operated ITFS facilities since 1983, presently serving the Silicon Valley area from two locations. The facilities are programmed through SCCOE's Television and Distance Learning Services (formerly Educational Media Center), which provides leadership, services, support and a variety of educational resources to educators, students, parents, businesses and community members in Santa Clara County. One channel is dedicated every day to arts programming; a second channel distributes distance learning programs received by satellite, supplemented with videotape materials. A third channel is specifically programmed with materials that are correlated to the California Standards and Frameworks, required of all elementary schools in the County. A fourth channel is reserved for the San Jose City Fire Department, and has been used since the 1980s 24 hours a day to provide training and information to the fire stations throughout this large city.

47. SCCOE, working with its excess capacity lessee Bay Area Cablevision (subsequently acquired by Sprint) secured developmental authority for digital operation on its ITFS system. It has been a test site for two-way digital services using equipment developed by Cisco Systems.

48. **The School Board of Sarasota County (Florida)**. The School Board of Sarasota County (The School Board) has actively developed and implemented the use of its ITFS station since it was first licensed in January 1992. A full broadcast schedule was launched during 1993 with 8-10 hours of instructional (K-12) and staff development programming per day. Over the years, millions of dollars have been expended in personnel, equipment, facilities, program licenses, production costs and the like.

49. The School Board has continued this schedule for nine years, but is very eager to move from the analog world into the digital to pursue interactive learning to the home and video streaming to provide a variety of opportunities for students based on their individual needs. The vision is to team with other schools (from other counties and the university level) to meet unique instructional needs of students that are not affordable in a classroom setting, and to improve and reduce the cost of staff development.

50. **Wichita Public Schools - USD 259.** Wichita Public Schools - USD 259 has been an ITFS licensee since 1990. It is part of the informal Wichita, Kansas consortium which has been studying the transition to digital technology and the two-way rules. (see Butler County Community College discussed above).

51. **Wichita State University**. Wichita State University has been an ITFS licensee since 1989. It is part of the informal Wichita, Kansas consortium which has been studying the

transition to digital technology and the two-way rules (see Butler County Community College discussed above).

C. THE 2500-2690 MHz BAND SHOULD BE MAINTAINED AS AN "EDUCATIONAL SPECTRUM RESERVE"

53. The reservation of spectrum for ITFS is unique and merits preservation as an educational spectrum reserve. The Commission should follow the same general policy here that it does concerning requests to "dereserve" FM and TV channels specially allocated for educational operation; that is, to strongly disfavor all attempts to invade the little spectrum reserved for such purposes, Deletion of Noncommercial Reservation of Channel *16, Pittsburgh, Pennsylvania, 11 FCC Rcd 11700 (1996) and cases cited Id. at 11708-11709. In addition, the Commission's maintenance of the ITFS allocation advances the interests of education as embodied in Section 706 of the Telecommunications Act of 1996.[1] Congress required the FCC to annually survey the development of "Advanced Telecommunications" services and in particular their availability to elementary and secondary schools and classrooms. Future surveys will show the benefits of not disturbing the development of ITFS spectrum for this purpose, development which has only begun under the new two-way rules. In the absence of a compelling case for dereservation, which has nowhere been made, the ITFS spectrum should and must be preserved.

54. The Joint Parties recognize the societal importance of advanced wireless services. IMT-2000 or so-called "Third Generation (3G)" wireless, as defined by international bodies and the mobile communications industry, may well be an important component of the communications future. However, the Commission should reject any proposals to earmark spectrum specifically for 3G which currently constitutes no more than a marketing concept for

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[1]See Sec. 706, Pub.L. 104-104, Title VII, Feb. 8, 1996, 100 Stat. 153, reproduced in the notes under 47 U.S.C.Sec. 157; See Second Report in CC Docket No. 98-146, FCC00-290, Appendix A.

the mobile equipment and services industries rather than a defined communications service. Notably, 3G proponents have made no compelling demonstration of the need for spectrum for this purpose. In all, the Commission's focus in this proceeding on "advanced wireless services" (Notice, para. 18), which include both fixed and mobile services, is correct. In this regard, fixed services are the key component of the current regulatory regime painstakingly developed by the Commission to promote efficient and effective use of ITFS. This regime has evolved over decades and has only recently been finalized in a manner which makes possible the wealth of services promised by ITFS licensees and their commercial partners, which have invested billions of dollars in ITFS/MDS spectrum development.

D. REMOVING ANY PORTION OF THE ITFS/MMDS BAND WOULD DISRUPT THE COMPLICATED BALANCE OF INTERESTS ENCOURAGED FOR THREE DECADES BY THE COMMISSION

55. From the outset of ITFS in the 1960s, a high degree of cooperation among licensees was required. The Commission's comprehensive technical rules governing the service indicate the level of cooperation needed to avoid interference through the careful placement of transmitters, the use of appropriate receive antennas and the limitation of power (e.g., 47 C.F.R. Sections 74.903, 74.937, 74.935). ITFS system design, originally intended for use of conventional television receivers[2], usually required low power (10 watt) transmitters, and significant geographical spacing to separate adjacent channel groups. The Commission adopted rules for MDS adjacent channel operation at 2150-2162 MHz in the 50 largest cities in 1974; these practices then were applied to the combined MMDS/ITFS band in 1983 when the "E" and

[2] The down-conversion of an entire group of ITFS channels to the frequencies used within the television tuner allowed for the translation, for example, of Channel A-1 to Channel 7; A-2 to 9; A-3 to 11 and A-4 to 13; assuming operation in an area that did not use those television channels over-the-air.

"F" channels were reallocated to the commercial service, and the practice of excess capacity leasing commenced.[3]

56. ITFS and Multipoint Distribution Service (MDS) licensees have become increasingly interdependent through successive changes in the FCC's rules. Even ITFS licensees operating without excess capacity agreements have entered interference agreements, accepted upgraded equipment and otherwise cooperated with same and adjacent-area ITFS and MMDS licensees as required by the FCC's rules. The shift from individual site receive licensing to 35-mile Protected Service Area (PSA) protection further accentuated the need for all licensees to work together.

57. The advent of digital operation and the "two-way" rules have increased this interdependence dramatically beyond that which is necessary only for interference-free operation. The development and maintenance of digital television systems, which have been deployed in many urban areas in the past few years, require substantial capital and technical expertise that is beyond that possessed by all but the most sophisticated ITFS licensees. The interdependence of ITFS and MDS operations has been substantially increased with the development of the broadband digital systems being deployed in conformance with the "two-way" rules. Early Internet offerings over MMDS used equipment adopted from the cable television modem platform. The Commission's recent rule change permitting the combination of ITFS/MMDS channels into "superchannels" and the division of licensed channels into sub-6 MHz channels has just begun to yield results in equipment deployment and system development. All of these developments have been premised on the entire 190 MHz being available to ITFS and MMDS licensees, and all of these systems have been designed around 2.5 Ghz propagation.

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[3] Report & Order in General Docket No. 80-112, Multipoint Distribution Service, 94 F.C.C. 2d 1203 (1983).

The Commission must give ITFS and MMDS licensees adequate time to fully develop the designs and systems which are only now being implemented.

58. The rules for development of the ITFS and MMDS services for digital two-way applications have only recently been finalized by the FCC. Some of the Joint Parties and other licensees in the industry have availed themselves of the first "window" for such two-way filings; others are in the planning stages to file at the next opportunity, and still others are continuing to negotiate the needed agreements among ITFS and commercial partners which will be needed to fully exploit the "two-way" rules. In the past several years, ITFS and MMDS licensees have expended enormous resources working to refine the FCC's rules, aggregate ITFS and MDS spectrum necessary for two-way development and plan two-way system implementation. The very pendency of this rulemaking has interfered with the complex negotiations and technical planning needed to bring to fruition the vision of widespread advanced wireless services which led the coalition of commercial and educational interests to propose the "two-way"rules in the first instance. It would be unfair and unwise for the Commission at this time to alter the spectrum allocation upon which these interests have depended in moving forward with the development of enhanced services to the public.

E. CONCLUSION - EARLY TERMINATION OF THE 2500-2690 MHz PORTION OF THIS PROCEEDING IS ESSENTIAL FOR THE RAPID DEVELOPMENT OF NEW WIRELESS BROADBAND NETWORKS

59. The Joint Parties urge the Commission to conclude that the widespread provision of advanced fixed wireless services in the near term requires preservation of the existing ITFS licensing scheme and maintenance of this educational spectrum reserve. The Commission should announce with certainty that it will not reallocate or disturb the existing licensing of the ITFS and MMDS stations in the 2500-2690 MHz band but will look elsewhere for "3G" spectrum, if it is needed. Such action which would constitute wise and prudent spectrum management and would therefore best serve the public interest.

Respectfully submitted,

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February 22, 2001

CERTIFICATE OF SERVICE

I, Nancy M. Cassady, Secretary in the law offices of Schwartz, Woods & Miller, do hereby certify that I have on this 22nd day of February, 2001, caused to be hand-delivered copies of the foregoing JOINT COMMENTS to:

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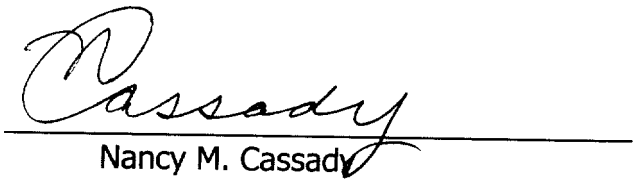

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